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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,092	12/21/1999	JOHN W. HORIGAN	042390.P7178	5766

7590 10/07/2003

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EXAMINER

WARREN, MATTHEW E

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

9/11

Office Action Summary	Application No. 09/470,092	Applicant(s) HORIGAN ET AL.	
	Examiner Matthew E. Warren	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/11/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Remarks filed on July 11, 2003.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuribayashi et al. (US 6,429,387 B1) in view of Martinez (US 4,471,408).

Kuribayashi et al. shows (figs. 5A, 5B, 6B, 14B) an integrated circuit package comprising a substrate including an IC (5). Solder balls (7) are selectively deposited or not deposited in specified areas. The presence or absence of a solder ball is designated digitally by a "1" or "0" (col. 16, lines 39-66). The package is also coupled to a circuit board (5A in fig. 14B). Kuribayashi shows all of the elements of the claims except the encoded region to provide information based on selective deposition. Martinez discloses (col. 2, lines 3-10) an integrated circuit in which pins are selectively bent or broken to encode the device. Pins that are broken and do not make contact with pins of a network have no voltage and inherently denote a logic level (1) and vice-versa. The pins are electrically coupled to a ground line and indicate a voltage supply level. Encoding may also be provided by coupling the pin to a node of a resistor (col. 1, lines 24-35). The pin may be assigned a configuration where the presence of a pin denotes

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ground and so forth (col. 2, lines 5-10). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the selectively deposited solder balls of the BGA of Kuribayashi by using the presence or absence of the balls to encode an integrated circuit with information because Martinez teaches the selective removal of electrical connections can be used to encode the semiconductor integrated circuit.

Claims 3-6 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuribayashi et al. (US 6,429,387 B1) in view of Martinez (US 4,471,408) as applied to claims 1, 2, and 8 above, and further in view of Wenzel et al. (US 6,150,724).

Kuribayashi et al. in view of Martinez shows all of the elements of the claims except the IC being a processor, which Wenzel et al. discloses (col. 6, lines 60-67). Kuribayashi further shows in figure 20H that the bottom of the package has at least 3 solder ball areas. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the IC of Kuribayashi and Martinez by using a processor as the IC because Wenzel teaches that processors are just one of the many known devices that could be formed in BGA package.

Response to Arguments

Applicant's arguments filed with respect to claims 1, 2, 7, and 8 have been fully considered but they are not persuasive. The applicant primarily asserts that the encoded pins of Martinez cannot be combined the with BGA package of Kuribayashi

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because Martinez discloses selectively bent pins for a piggy back device to be clipped to the top of an integrated circuit package. Whether the invention of Martinez is an integrated circuit package or a piggyback device clipped to the package, the concept is still the same. Martinez was cited to show that an electrical connector, such as a pin, is selectively removed to encode the semiconductor device. The examiner equates that pin to an electrical connector, the electrical connector including components such as pins, wires, and solder balls. Therefore, a solder ball, being an electrical connector, can also be removed from a semiconductor package to be encoded in a specific manner. The piggyback device of Martinez is analogous to Kuribayashi because both references deal with the electrical connection of semiconductor devices. The references can be combined with each other and show all of the elements of the claims. This action is made final.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (703) 305-0760. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MEW

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October 2, 2003



**ALLAN R. WILSON
PRIMARY EXAMINER**